

WHAT IS CLAIMED IS:

1. A display system comprising:
 - a base;
 - an electric motor supported by said base;
 - 5 a shaft extending from said motor and operable so as to rotate when power is applied to said motor;
 - an elongated, generally planar display assembly center mounted to said shaft so that said display assembly rotates as said shaft rotates;
 - a light array mounted to an end portion of said display assembly so as to sweep
 - 10 out a generally cylindrical path as said display assembly rotates;
 - an elongated, generally planar control assembly fixedly mounted to said base between said motor and said display assembly, said control assembly configured to accommodate said shaft; and
 - an inductive coupling adapted to provide electrical communications between
 - 15 said control assembly and said display assembly.
2. The display system according to claim 1 further comprising:
 - a first switch located on said control assembly configured to transfer power from a power source to said inductive coupling; and
 - a power block located on said display assembly configured to transfer power
 - 20 from said inductive coupling to said display assembly.
3. The display system according to claim 2 further comprising:
 - a first processor located on said control assembly and operable to generate a plurality of display commands;
 - a second switch located on said control assembly and in electrical
 - 25 communications with said first processor, said second switch configured to transfer said display commands to said inductive coupling;
 - a second processor located on said display assembly; and
 - a data block located on said display assembly configured to transfer said display commands from said inductive coupling to said second processor,

said second processor operable to transfer display data to said light array according to said display commands.

4. The display system according to claim 3 further comprising a sensor output responsive to a position of said display assembly relative to said control
5 assembly, said first processor in communications with said sensor output so as to generate a trigger command to said second processor, said trigger command incorporating a variable trigger delay, said trigger command indicating the apparent position of a pixel display.

5. The display system according to claim 4 further comprising a push
10 button switch operable in conjunction with a menu presented on said pixel display so as to set an operational mode.

6. The display system according to claim 5 further comprising a plurality of display language instructions for display specific tasks, said display language instructions interpreted by said first processor so as to generate said display commands.

15 7. The display system according to claim 3 wherein said inductive coupling comprises:

a first inductive coupler mounted on said display assembly concentric with said shaft; and

a second inductive coupler mounted on said control assembly concentric with
20 said shaft, said first inductive coupler and said second inductive coupler maintained at a fixed distance apart.

8. The display system according to claim 4 wherein said sensor comprises:
a Hall-effect sensor mounted on said control assembly; and
a magnet mounted on a base portion of said shaft so that said magnet repeatedly
25 passes under said Hall-effect sensor as said shaft rotates.

9. A rotating display comprising:
a motor;
a plurality of light emitters mounted to said motor, said emitters being modulated
as said motor is spun so as to synthesize a pixel display along a warped two-dimensional
30 plane; and

an inductive coupling providing power and data to said light emitters.

10. The rotating display according to claim 9 wherein a plurality of display data can be transferred to said light emitters while said light emitters are in motion so as to generate 2-D scrolling and animation effects as well as to update text on said pixel display
5 via an external data source.

11. The rotating display according to claim 10 wherein said display data may scroll 360 degrees on a cylindrical plane so that a person may view said pixel display from any surrounding vantage point.

12. The rotating display according to claim 11 wherein said display data is bit-
10 mapped so that any alphanumeric characters as well as custom icons or graphics can be displayed for static and animated effects.

13. The rotating display according to claim 12 further comprising:
a one-button interface; and
a menu initiated from said interface and appearing on said display elements, said
15 items on said menu being selectable by said interface.

14. The rotating display according to claim 13 further comprising:
a microprocessor;
a re-programmable nonvolatile memory having a program space and a data space;
and
20 a computer adapter allowing a program and a message to be externally downloaded to said program space and said data space, respectively, said message being displayed according to said program.

15. A display method comprising the steps of:
describing a pixel display with a display instruction;
25 interpreting said display instruction so as to create a display command;
generating a data signal responsive to said display command;
deriving a plurality of column data responsive to said data signal;
rotating a display assembly about an axis so that a light array mounted on said display assembly sweeps along an arc surface; and

modulating said light array with said column data so as to create a viewable area of said pixel display across at least a portion of said arc surface.

16. The display method according to claim 15 comprising the further steps of:
combining a power source and said data signal into a waveform;
5 inductively coupling said waveform to said display assembly;
filtering display assembly power from said waveform; and
decoding said data signal from said waveform.

17. The display method according to claim 16 wherein said waveform is a square wave, said data signal is a plurality of bits and said combining step comprises the
10 substeps of:
switching said power source so as to generate said square wave;
interrupting said square wave for a first time period in response to each of said bits that is a one; and
interrupting said square wave for a second time period in response to each of said
15 bits that is a zero.

18. The display method according to claim 18 wherein said square wave has a time period of T and said first time period is about $10T$ and said second time period is about $20T$, said decoding step comprising the substeps of:
generating a zero bit if said square wave ceases for a time period greater than $15T$;
20 and
generating a one bit if said square wave ceases for a time period less than $15T$.

19. The display method according to claim 16 comprising the further steps of:
sensing a trigger position of said display assembly;
adding a variable delay to said trigger position so as to create a virtual trigger
25 position;
initiating said modulating step in response to said virtual trigger position; and
adjusting said variable delay so as to position said viewable area.

20. The display method according to claim 19 comprising the further steps of:
designating a front position for said pixel display;

calculating said viewable area from a rotational speed of said display assembly and
a number of columns of said pixel display; and

determining said variable delay from said viewable area and said trigger position
so as to position a center of said viewable area at said front position.

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